AMENDMENTS TO THE CLAIMS

1 (Currently amended) A method comprising:

growing a first nanowire segment from a nanoparticle; ~~and~~

growing a second nanowire segment between the first nanowire~~s~~ segment and the nanoparticle, wherein the first nanowire segment and the second nanowire segment have a different solubility; and

sacrificing one of the first nanowire segment and the second nanowire segment.

2. (Currently amended) The method of claim 1, further comprising:

~~after growing the first nanowire segment and the second nanowire segment,~~ where sacrificing one of the first nanowire segment and the second nanowire segment comprises dissolving the ~~second~~ nanowire segment.

3. (Currently amended) The method of claim 1, further comprising:

repeating growing the first nanowire segment and the second nanowire segment in an alternating fashion until a defined number of nanowire segments have been grown from the nanoparticle.

4. (Original) The method of claim 1, wherein the second nanowire segment comprises silicon, and the first nanowire segment comprises germanium.

5. (Original) The method of claim 1, wherein the second nanowire segment comprises germanium, and the first nanowire segment comprises silicon.

6. (Original) The method of claim 1, wherein the nanoparticle comprises a gold particle.

7. (Cancelled) The method of claim 1, further comprising:

growing a third nanowire segment between the second nanowire segment and the nanoparticle, wherein the second nanowire segment and the third nanowire segment have different solubility.

8. (Original) The method of claim 7, further comprising:

selectively dissolving the first nanowire segment and the third nanowire segment such that the second nanowire segment is separated from the nanoparticle.

9. (Currently amended) The method of ~~claim 1~~claim 3, wherein the first and third nanowire segments comprise germanium, and the second nanowire segments ~~comprises~~ comprise silicon.

10. (Withdrawn) An apparatus comprising:

a nanoparticle; and

a plurality of nanowire segments attached to the nanoparticle, wherein at least two of the nanowire segments have a different solubility.

11. (Withdrawn) The apparatus of claim 10, wherein one of the nanowire segments that is directly attached to the nanoparticle comprises germanium.

12. (Withdrawn) The apparatus of claim 10, wherein one of the nanowire segments that is disposed at an end opposite to the nanoparticle comprises germanium.

13. (Withdrawn) The apparatus of claim 10, wherein the nanoparticle comprises a gold particle.

14. (Withdrawn) The apparatus of claim 10, wherein at least one of the nanowire segment comprises silicon.

15. (Withdrawn) The apparatus of claim 10, wherein the plurality of nanowire segments comprise:

a first nanowire segment; and

a second nanowire segment attached between the first nanowire segment and the nanoparticle, wherein the first nanowire segment and the second nanowire segment have different solubility.

16. (Withdrawn) The apparatus of claim 10, wherein the plurality of nanowire segments comprise:

a first nanowire segment; and

a second nanowire segment attached between the first nanowire segment and a third nanowire segment, the third nanowire segment attached between the second nanowire segment and the nanoparticle, wherein the second nanowire segment and the third nanowire segment have different solubility.

17. (Currently Amended) A method comprising:

placing a plurality of nanoparticles on a substrate;

exposing the nanoparticles to a first vapor precursor to grow first nanowire segments from the nanoparticles; ~~and~~

exposing the nanoparticles to a second vapor precursor to grow second nanowire segments between the first nanowire segments and the nanoparticles, wherein the first nanowire

segments and the second nanowire segments comprise material having ~~have~~ different solubility; and

sacrificing one of the first nanowire segments and the second nanowire segments.

18. (Currently amended) The method of claim 17, ~~further comprising:~~ wherein sacrificing comprises

selectively dissolving one of the first nanowire segments and the second nanowire segments such that the other of the first nanowire segments and the second nanowire segments are separated from the nanoparticles.

19. (Original) The method of claim 17, wherein the first vapor precursor is silane and the second vapor precursor is germane.

20. (Original) The method of claim 17, wherein the nanoparticles comprises gold particles.

21. (Currently amended) The method of claim 17, further comprising:

exposing the nanoparticles to the first vapor precursor to grow third nanowire segments between the second nanowire segments and the nanoparticles, wherein the second nanowire segments and the third nanowire segments have different solubility.

22. (Original) The method of claim 21, further comprising:

selectively dissolving the first nanowire segments and the third nanowire segments such that the second nanowire segments are separated from the nanoparticles.

23. (Currently amended) The method of ~~claim 17~~claim 21, wherein the first and third nanowire segments comprises germanium, and the second nanowire segment comprises silicon.

24. (Original) The method of claim 17, further comprising:

using a first solution to selectively dissolve a portion of the nanowire segments such that a remaining portion of the nanowire segments are separated from the nanoparticles.

25. (Original) The method of claim 24, further comprising:

reducing a concentration of the nanoparticles from a solution containing the separated nanowire segments.

26. (Original) The method of claim 25, wherein reducing a concentration of the nanoparticles from a solution comprises:

mixing the solution with a hydrocarbon solution containing thioalkyl compounds;

maintaining the mixed solution for a period time such that the solution is separated into a first layer containing thioalkyl compounds and a second layer containing the nanowire segments; and

removing the first layer containing the thioalkyl compounds attached to the nanoparticles such that the second layer has a reduced nanoparticle concentration than prior to mixing process.